



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0399; Project Identifier MCAI-2021-00983-T]

RIN 2120-AA64

Airworthiness Directives; Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica S.A.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain Embraer S.A. Model ERJ 190-100 ECJ airplanes. This proposed AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and that some life limits on some components used on the main landing gear (MLG) may not be properly controlled, due to interchanging those parts between airplane models with different operational loads during repair or overhaul. This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations; reviewing maintenance records of the MLG assemblies to determine if any life-limited item has been replaced and reporting those findings; and re-identifying the MLG assemblies and certain components; as specified in an Agência Nacional de Aviação Civil (ANAC) AD, which is proposed for incorporation by reference. This proposed AD would also prohibit installing certain part numbers. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For material that will be incorporated by reference (IBR) in this AD, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; Internet www.anac.gov.br/en/. You may find this material on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0399.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0399; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, the mandatory continuing airworthiness information (MCAI), any

comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Krista Greer, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email krista.greer@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2022-0399; Project Identifier MCAI-2021-00983-T” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each

page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Krista Greer, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email krista.greer@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The ANAC, which is the aviation authority for Brazil, has issued ANAC AD 2021-08-01, effective August 31, 2021 (ANAC AD 2021-08-01) (also referred to as the MCAI), to correct an unsafe condition for certain Embraer S.A. Model ERJ 190-100 ECJ airplanes.

This proposed AD was prompted by a determination that new or more restrictive airworthiness limitations are necessary and that some life limits on some structural parts (components) used on the MLG may not be properly controlled, due to interchanging those parts between airplane models with different operational loads. Structural parts and life limited items used in commercial versions of Models ERJ 190-100 and ERJ 190-200 airplanes are common to the ones used on Model ERJ 190-100 ECJ (Lineage 1000) airplanes. Although the MLG assemblies are not interchangeable between models, some components (e.g. pins and bolts) of the MLG assemblies can be exchanged between models; this exchange may have happened during repair or overhaul of an MLG assembly. While these models have similar designs, their usage is very different. Life limits for airplane parts are based on fatigue tests, which simulate typical usage for the airplane. These fatigue tests are based on the entire MLG assembly remaining the same, not on components of the MLG assembly being interchanged partway through the test. Since the operational loads are different for each airplane model, an adequate life limit

may not be properly controlled in this scenario. Therefore, ANAC has determined that the MLG assemblies that cannot be interchanged must be re-identified for use only on Model ERJ 190-100 ECJ airplanes, and the components that may have been interchanged must also be re-identified and tracked. Embraer S.A. and ANAC will use the reports required by this proposed AD to analyze the data and determine if the life limits for the MLG assemblies or their components need to be revised based on components being interchanged between models. The FAA is proposing this AD to address potentially inadequate life limits on the MLG due to different operational loads, which could impact the structural integrity of the airplane. See the MCAI for additional background information.

Related Service Information under 1 CFR Part 51

ANAC AD 2021-08-01 specifies new or more restrictive airworthiness limitations for airplane structures and safe life limits; reviewing maintenance records of the MLG side stay assembly and the MLG shock strut assembly to determine if any life-limited item has been replaced and reporting those findings; and reidentifying certain part numbers of the MLG side stay assembly and the MLG shock strut assembly and their components. ANAC AD 2021-08-01 also specifies prohibiting the installation of certain part numbers. This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

This product has been approved by the aviation authority of another country and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, it has notified the FAA of the unsafe condition described in the MCAI referenced above. The FAA is issuing this NPRM after

determining that the unsafe condition described previously is likely to exist or develop in other products of the same type designs.

Proposed AD Requirements in this NPRM

This proposed AD would require revising the existing maintenance or inspection program, as applicable, to incorporate new or more restrictive airworthiness limitations; reviewing maintenance records of the MLG side stay assembly and the MLG shock strut assembly to determine if any life-limited item has been replaced and reporting those findings; and re-identifying the MLG side stay assembly and the MLG shock strut assembly and certain components; which are specified in ANAC AD 2021-08-01 described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD. This proposed AD would also prohibit installing certain part numbers.

This proposed AD would require revisions to certain operator maintenance documents to include new actions (e.g., inspections). Compliance with these actions is required by 14 CFR 91.403(c). For airplanes that have been previously modified, altered, or repaired in the areas addressed by this proposed AD, the operator may not be able to accomplish the actions described in the revisions. In this situation, to comply with 14 CFR 91.403(c), the operator must request approval for an alternative method of compliance according to paragraph (j)(1) of this proposed AD.

Explanation of Required Compliance Information

In the FAA's ongoing efforts to improve the efficiency of the AD process, the FAA developed a process to use some civil aviation authority (CAA) ADs as the primary source of information for compliance with requirements for corresponding FAA ADs. The FAA has been coordinating this process with manufacturers and CAAs. As a result, the FAA proposes to incorporate ANAC AD 2021-08-01 by reference in the FAA final rule. This proposed AD would, therefore, require compliance with ANAC AD

2021-08-01 in its entirety through that incorporation, except for any differences identified as exceptions in the regulatory text of this proposed AD. Service information required by ANAC AD 2021-08-01 for compliance will be available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0399 after the FAA final rule is published.

Airworthiness Limitation ADs Using the New Process

The FAA's process of incorporating by reference MCAI ADs as the primary source of information for compliance with corresponding FAA ADs has been limited to certain MCAI ADs (primarily those with service bulletins as the primary source of information for accomplishing the actions required by the FAA AD). However, the FAA is now expanding the process to include MCAI ADs that require a change to airworthiness limitation documents, such as airworthiness limitation sections.

For these ADs that incorporate by reference an MCAI AD that changes airworthiness limitations, the FAA requirements are unchanged. Operators must revise the existing maintenance or inspection program, as applicable, to incorporate the information specified in the new airworthiness limitation document. The airworthiness limitations must be followed according to 14 CFR 91.403(c) and 91.409(e).

The previous format of the airworthiness limitation ADs included a paragraph that specified that no alternative actions (e.g., inspections) or intervals may be used unless the actions and intervals are approved as an alternative method of compliance (AMOC) in accordance with the procedures specified in the AMOCs paragraph under "Additional FAA Provisions." This new format includes a "New Provisions for Alternative Actions and Intervals" paragraph that does not specifically refer to AMOCs, but operators may still request an AMOC to use an alternative action or interval.

Interim Action

The FAA considers this proposed AD interim action. The inspection reports required by this proposed AD will enable the manufacturer to gain better insight into the extent to which components have been interchanged between models and determine if additional actions are required to address the identified unsafe condition. Based on the result of the manufacturer's analyses, the FAA might consider further rulemaking.

Costs of Compliance

The FAA estimates that this proposed AD would affect 10 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

The FAA has determined that revising the existing maintenance or inspection program takes an average of 90 work-hours per operator, although the agency recognizes that this number may vary from operator to operator. Since operators incorporate maintenance or inspection program changes for their affected fleet(s), the FAA has determined that a per-operator estimate is more accurate than a per-airplane estimate. Therefore, the agency estimates the average total cost per operator to be \$7,650 (90 work-hours x \$85 per work-hour).

Estimated costs for required actions*

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
6 work-hours X \$85 per hour = \$510	\$0	\$510	\$5,100

*Table does not include estimated costs for reporting and revising the existing maintenance or inspection program.

The FAA estimates that it would take about 1 work-hour per product to comply with the proposed reporting requirement in this proposed AD. The average labor rate is \$85 per hour. Based on these figures, the FAA estimates the cost of reporting on U.S. operators to be \$850, or \$85 per product.

According to the manufacturer, some or all of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. The FAA does not control warranty coverage for affected individuals. As a result, the FAA has included all known costs in the cost estimate.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB Control Number. The OMB Control Number for this information collection is 2120-0056. Public reporting for this collection of information is estimated to take approximately 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. All responses to this collection of information are mandatory. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Parkway, Fort Worth, TX 76177-1524.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by

prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Embraer S.A. (Type Certificate Previously Held by Yaborã Indústria Aeronáutica

S.A.): Docket No. FAA-2022-0399; Project Identifier MCAI-2021-00983-T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by
[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL
REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Embraer S.A. (Type Certificate Previously Held by Yaborã
Indústria Aeronáutica S.A.) Model ERJ 190-100 ECJ airplanes, certificated in any
category, as identified in Agência Nacional de Aviação Civil (ANAC) AD 2021-08-01,
effective August 31, 2021 (ANAC AD 2021-08-01).

(d) Subject

Air Transport Association (ATA) of America Code 05, Time Limits/Maintenance
Checks; 32, Landing Gear.

(e) Unsafe Condition

This AD was prompted by a determination that new or more restrictive
airworthiness limitations are necessary and that some life limits on some structural parts
used on the main landing gear (MLG) may not be properly controlled, due to
interchanging those parts between airplane models with different operational loads during
repair or overhaul. The FAA is issuing this AD to address potentially inadequate life
limits on the MLG due to different operational loads, which could impact the structural
integrity of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, ANAC AD 2021-08-01.

(h) Exceptions to ANAC AD 2021-08-01

(1) Where ANAC AD 2021-08-01 refers to its effective date, this AD requires using the effective date of this AD.

(2) The initial compliance time for doing the tasks specified in paragraph (a) of ANAC AD 2021-08-01 is no later than the applicable “life limit cycles” specified in the service information referenced in ANAC AD 2021-08-01, or within 90 days after the effective date of this AD, whichever occurs later.

(3) Paragraph (b) of ANAC AD 2021-08-01 specifies to report inspection results to Embraer within a certain compliance time. For this AD, report inspection results at the applicable time specified in paragraph (h)(3)(i) or (ii) of this AD.

(i) If the inspection was done on or after the effective date of this AD: Submit the report within 90 days after the inspection.

(ii) If the inspection was done before the effective date of this AD: Submit the report within 90 days after the effective date of this AD.

(4) The “Alternative Method of Compliance (AMOC)” section of ANAC AD 2021-08-01 does not apply to this AD.

(i) Provisions for Alternative Actions and Intervals

After the existing maintenance or inspection program has been revised as required by paragraph (g) of this AD, no alternative actions (e.g., inspections) and intervals are allowed, unless they are approved as specified in paragraph (a) of ANAC AD 2021-08-01.

(j) Additional AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs)*: The Manager, Large Aircraft Section, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the Large Aircraft Section, International Validation Branch, send it to the attention of the person identified in paragraph (k)(2) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(2) *Contacting the Manufacturer*: For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, Large Aircraft Section, International Validation Branch, FAA; or ANAC; or ANAC's authorized Designee. If approved by the ANAC Designee, the approval must include the Designee's authorized signature.

(k) Related Information

(1) For ANAC AD 2021-08-01, contact National Civil Aviation Agency (ANAC), Aeronautical Products Certification Branch (GGCP), Rua Dr. Orlando Feirabend Filho, 230 – Centro Empresarial Aquarius – Torre B – Andares 14 a 18, Parque Residencial Aquarius, CEP 12.246-190 – São José dos Campos – SP, Brazil; telephone 55 (12) 3203-6600; email pac@anac.gov.br; Internet www.anac.gov.br/en/. You may find this ANAC AD on the ANAC website at <https://sistemas.anac.gov.br/certificacao/DA/DAE.asp>. You may view this material at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call

206-231-3195. This material may be found in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0399.

(2) For more information about this AD, contact Krista Greer, Aerospace Engineer, Large Aircraft Section, FAA, International Validation Branch, 2200 South 216th St., Des Moines, WA 98198; telephone and fax 206-231-3221; email krista.greer@faa.gov.

Issued on April 4, 2022.

Lance T. Gant, Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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